

Title (en)

Gain and phase correction in a dual branch receiver.

Title (de)

Phasen- und Verstärkungsregelung für einen Empfänger mit zwei Zweigen.

Title (fr)

Correction de phase et d'amplification pour un récepteur à deux branches.

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Application

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Priority

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Abstract (en)

A dual branch receiver consists first and second branches (12, 14) respectively comprising first and third mixers (16, 20) and second and fourth mixers (17, 21). An input terminal (10) for a signal having a carrier frequency (ω_c) is connected to the first and second paths. A first local oscillator frequency (ω_o) is supplied in quadrature to the first and second mixers (16, 17), where $\omega_c - \omega_o = \Delta$ and Δ is of the order of $2\pi \times 100$ radians/sec. A second local oscillator (30) frequency is supplied in quadrature to the third and fourth mixers (20, 21). An output signal is derived by connecting a sum circuit (22) and a difference circuit (24) to the first and second branches. The outputs of the sum and difference circuits (22, 24) are also used to provide gain and phase correction signals. It has been found that if the correction signals are based on signals centred on 2Δ then they are substantially free of ripple. The gain correction is derived by mixing the 2Δ signals derived by multiplying difference by difference (or sum by sum) with the 2Δ signals derived by multiplying sum by difference and low pass filtering. The phase correction is derived by mixing a 90° phase shifted difference signal with the sum signal (or vice versa) and deriving the 2Δ signals which are mixed with 2Δ signals derived by multiplying the difference by difference (or sum by sum) and low pass filtering.

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Cited by

US5617060A; EP2752989A1; EP0739090A1; US5822366A; US5787362A; EP2434640A1; GB2326038A; US5768691A; US6115585A; GB2297442A; US5710997A; GB2297442B; CN102273067A; US8126421B2; US6317589B1; US7376170B2; US8867671B2; WO2010076651A3; WO2012038338A1; WO0124358A1; WO9530275A1; WO0225804A3; US6714776B1; US8768283B2; US9020077B2; US9210026B2; EP2400660B1

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